

Specification for mortar for masonry —

Part 2: Masonry mortar

The European Standard EN 998-2:2001 has the status of a
British Standard

ICS 91.100.10

National foreword

This British Standard is the official English language version of EN 998-2:2001.

This edition of EN 998-2, which is an “ordinary” European Standard, will be superseded in due course by a “harmonized” edition of this European Standard. The “harmonized” EN 998-2 will fully take into account the requirements of the European Commission mandate M116, *Masonry and related products*, given under the EU Construction Products Directive (89/106/EEC), and is intended to lead to CE marking.

The “harmonized” edition of EN 998-2 is the subject of transitional arrangements agreed under the Commission mandate. The Member States have agreed a nominal transition period for the co-existence of the future “harmonized” edition of EN 998-2 and their corresponding national standard(s). It is intended that this period will comprise a nominal nine month period during which any required changes to national regulations are to be made, followed by a further nominal twelve month period for the implementation of CE marking. At the end of this co-existence period, the national standard(s) will be withdrawn. In the UK, the corresponding national standards are:

- BS 4551-1:1998, *Methods of testing mortars, screeds and plasters — Part 1: Physical testing*.
- BS 4721:1981, *Specification for ready-mixed building mortars*.
- BS 5838-2:1980, *Specification for dry packaged cementitious mixes — Part 2: Prepacked mortar mixes*.

Commentary on the differences between these national standards and BS EN 998-2:2002 are given in a national annex NA.

The UK participation in the preparation of BS EN 998-2:2002 was entrusted by Technical Committee B/519, Masonry and associated testing, to Subcommittee B/519/2, Mortar, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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English version

Specification for mortar for masonry — Part 2: Masonry mortar

Specifications des mortiers pour maçonnerie —
Partie 2: Mortiers de montage

Festlegungen für Mörtel im Mauerwerksbau —
Teil 2: Mauermörtel

This European Standard was approved by CEN on 5 August 2000.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 125, Masonry, the Secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2001, and conflicting national standards shall be withdrawn at the latest by December 2001.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports the essential requirements of the EU Construction Products Directive (89/106/EEC).

Annex A of this European Standard is normative, annex B is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The properties required of a mortar are related to its use. They are considered in two groups viz.: those relating to the fresh, unhardened mortar and those to the hardened mortar.

Annex B is an informative annex giving guidance in the application and use of masonry units and masonry mortar within the scope of this standard.

It has not been possible for the time being to produce a specific requirement and method of test for bond strength of the masonry mortar to specified masonry units. This draft standard nevertheless addresses the matter indirectly via reference to shear testing of masonry specimens.

1 Scope

This part of EN 998 specifies requirements for masonry mortars (bedding, jointing and pointing) for use in masonry (e.g. facing and rendered masonry, loadbearing or non-loadbearing masonry structures, including internal linings and partitions, for building and civil engineering).

To support the aim of achieving a performance-related standard, as far as practicable, the standard refers only to the properties of the product and not to its method of manufacture, except where this is unavoidable in the description of the characteristics of the product.

It defines for fresh mortars the performance related to workable life, chloride content, air content, correction time (for thin layer mortars) and density. For hardened mortars it defines the performance related to compressive strength, bond strength, durability and thermal properties and density. All performances are measured according to the corresponding test methods contained in separate European Standards.

It provides for the evaluation of conformity of the product to this European Standard.

The marking requirement for products covered by this European Standard is included.

This standard covers masonry mortars defined in **clause 3** with the exception of site made mortars. However, this standard or part of this standard may be used in conjunction with codes of applications and national specifications covering site made mortars.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1015-1, *Methods of test for mortar for masonry — Part 1: Determination of particle size distribution (by sieve analysis)*.

EN 1015-2, *Methods of test for mortar for masonry — Part 2: Bulk sampling of mortars and preparation of test mortars*.

EN 1015-6, *Methods of test for mortar for masonry — Part 6: Determination of bulk density of fresh mortar*.

EN 1015-7, *Methods of test for mortar for masonry — Part 7: Determination of air content of fresh mortar*.

EN 1015-9, *Methods of test for mortar for masonry — Part 9: Determination of workable life and correction time of fresh mortar*.

EN 1015-10, *Methods of test for mortar for masonry — Part 10: Determination of dry bulk density of hardened mortar*.

EN 1015-11, *Methods of test for mortar for masonry — Part 11: Determination of flexural and compressive strength of hardened mortar*.

prEN 1015-17, *Methods of test for mortar for masonry — Part 17: Determination of water soluble chloride content of fresh mortar*.

prEN 1052-3, *Methods of test for masonry — Part 3: Determination of initial shear strength*.

prEN 1745, *Masonry and masonry products — Methods for determining design thermal values*.

3 Terms and definitions

For the purpose of this standard, the following terms and definitions apply.

3.1 Masonry mortar: A mix of one or more inorganic binders, aggregates, water, and sometimes additions and/or admixtures.

3.1.1 fresh mortar: A mortar completely mixed and ready for use in masonry.

3.2 Type of mortar, defined according to concept

3.2.1 designed mortar: A mortar whose composition and manufacturing method is chosen by the producer in order to achieve specified properties (performance concept).

3.2.2 prescribed mortar: A mortar made in predetermined proportions, the properties of which are assumed from the stated proportion of the constituents (recipe concept).

3.3 Type of mortar, defined according to application

3.3.1 general purpose mortar: A mortar for use in joints with a thickness greater than 3 mm and in which only normal weight aggregates are used.

3.3.2 thin layer mortar: A designed mortar for use in joints between 1 mm and 3 mm in thickness.

3.3.3 lightweight masonry mortar: A designed masonry mortar with a dry hardened density below a prescribed figure (see 5.3.4).

3.4 Type of mortar, defined according to the location or mode of manufacture

3.4.1 factory made mortar: A mortar batched and mixed in a factory. It may be “dry mortar” which is ready-mixed, only requiring the addition of water or “wet mortar” which is supplied ready for use.

3.4.2 semi-finished factory made mortar: A mortar described in either 3.4.2.1 or 3.4.2.2.

3.4.2.1 prebatched mortar: Constituents wholly batched in a factory, supplied to the building site and mixed there according to the manufacturer’s specification and conditions.

3.4.2.2 premixed lime-sand-mortar: Constituents wholly batched and mixed in a factory, supplied to the building site where further constituents specified or provided by the factory are added (e.g. cement).

3.4.3 site-made mortar: A mortar composed of individual constituents batched and mixed on the building site.

3.5 binder: Material used to hold solid particles together in a coherent mass, e.g. cement, building lime.

3.6 aggregate: Granular material that does not contribute to the hardening reaction of the mortar.

3.7 admixture: Material added in small quantities in relation to the mass of binder of the mortar to produce specified modifications to the properties.

3.8 addition: A finely divided inorganic material (which is not an aggregate or binder) that may be added to mortar in order to improve or achieve special properties.

3.9 bond strength: Adhesion perpendicular to the bed between the masonry mortar and the masonry unit.

3.10 declared value: A value that a manufacturer is confident in achieving, bearing in mind the precision of test and variability of process.

3.11 masonry subjected to severe exposure: Masonry or elements of masonry which are subjected to saturation with water (driving rain, ground water) combined with frequent freeze/thaw-cycling due to climatic conditions, and absence of protective features.

3.12 masonry subjected to moderate exposure: Masonry or elements of masonry which are exposed to moisture and freeze/thaw-cycling, excluding constructions subjected to severe exposure.

3.13 masonry subjected to passive exposure: Masonry or elements of masonry which are not intended to be exposed to moisture and freezing conditions.

4 Materials

4.1 Inorganic binders

Inorganic binders with established suitability for mortars shall be used. When EN standards are available and deal with inorganic binders suitable for mortars, these binders should be used.

NOTE Where no ENs are currently available, existing ENVs, European Technical approvals or National Specifications which deal with inorganic binders suitable for mortars may be taken into account.

4.2 Aggregates

Aggregates with established suitability for mortars shall be used. When EN standards are available and deal with aggregates suitable for mortars, these aggregates should be used.

NOTE Where no ENs are currently available, existing ENVs, Technical approvals or National Specifications which deal with aggregates suitable for mortars may be taken into account.

4.3 Admixtures

When admixtures are used they shall have established suitability for mortars. When EN standards are available and deal with admixtures suitable for mortars, these admixtures should be used.